

IN THE CLAIMS:

1. (Currently Amended) A swivel assembly for a downhole tool string, comprising: first and second coaxial housings cooperatively arranged; the first housing comprising a first transmission element in communication with surface equipment; the second housing comprising a second transmission element in communication with the first transmission element and a third transmission element adapted for communication with a network integrated into the downhole tool string; ~~and~~ an electronic circuitry in electrical communications with one of the transmission elements; a shield is externally mounted to the first or second housing and is adapted to protect a connection between the first and second housings from debris; and the shield comprises a means for lubricating the connection between the first and second housing.
2. (Original) The swivel assembly of claim 1, wherein the second housing is rotational and adapted to transmit a signal between the downhole network and the first housing.
3. (Original) The swivel assembly of claim 1, wherein an internal conductor is disposed within a passage of the second housing and connects the second and third transmission elements.
4. (Original) The swivel assembly of claim 1, wherein an external conductor connect the first transmission element and surface equipment.
5. (Original) The swivel assembly of claim 4, wherein the external conductor is a copper wire, a coaxial a cable, twin axial cable, a triaxial cable, a fiber optic cable, or a ribbon cable.
6. (Original) The swivel assembly of claim 1, wherein the electronic circuitry is disposed in

housing externally mounted to the first housing.

7. (Original) The swivel assembly of claim 1, wherein the electronic circuitry is disposed in housing internally mounted in the second housing.

8. (Original) The swivel assembly of claim 1, wherein the electronic circuitry is disposed in housing externally mounted to the second housing.

9. (Original) The swivel assembly of claim 1, wherein the electronic circuitry is disposed in a recess in the second housing.

10. (Original) The swivel assembly of claim 9, wherein the recess is between the second and third transmission elements.

11. (Original) The swivel assembly of claim 9, wherein the recess is disposed in an inner circumference of the second housing or an outer circumference of the second housing.

12. (Original) The swivel assembly of claim 1, wherein the electronic circuitry is disposed in a recess in the first housing.

13. (Canceled)

14. (Canceled)

15. (Original) The swivel assembly of claim 1, wherein the electronic circuitry comprises components selected from the group consisting of a signal filtering circuit, a signal error checking circuit, a device control circuit, a modem, a digital processor, an optical

regenerator, an optical transmitter, an optical receiver, a repeater circuit, a sensor, a router, a switches, memory, an amplifier, a clock source, OLE_LINK1 a data compression circuit, a data rate adjustment circuitOLE_LINK1, a piezoelectric device, a light, a gauge, a wireless transceiver, a digital/optical converter, an analogue/optical converter, and a microcontroller.

16. (Original) The swivel assembly of claim 1, wherein the swivel assembly further comprises an internal power source.

17. (Currently Amended) A swivel assembly for a downhole tool string, comprising: first and second coaxial housings ~~cooperatively arranged~~; the first housing comprising a first transmission element in communication with surface equipment; the second housing comprising a second transmission element in communication with the first transmission element and a third transmission element adapted for communication with a network integrated into the downhole tool string; the second housing having a cylindrical form comprising an inner circumference and an outer circumference, wherein the second housing is disposed within the inner circumference of the first housing; an internal conductor disposed in a passage of the second housing and connecting the second and third transmission elements; a shield externally mounted to the swivel assembly adapted to protect a connection between the first and second housing; ~~and~~ an electronic component in communications with the first transmission element and externally mounted to the first housing; a shield is externally mounted to the first or second housing and is adapted to protect a connection between the first and second housings from debris; and the shield comprises a means for lubricating the connection between the first and second housing.

18. (Canceled)

19. (Canceled)

20. (Currently Amended) The swivel assembly of claim 17, wherein the electronic ~~component circuitry~~ comprises components selected from the group consisting of a signal filtering circuit, a signal error checking circuit, a device control circuit, a modem, a digital processor, an optical regenerator, an optical transmitter, an optical receiver, a repeater circuit, a sensor, a router, a switches, memory, an amplifier, a clock source, a data compression circuit, a data rate adjustment circuit, a piezoelectric device, a light, a gauge, a wireless transceiver, a digital/optical converter, an analogue/optical converter, and a microcontroller.

21. (Original) The swivel assembly of claim 17, wherein the swivel assembly further comprises an internal power source.